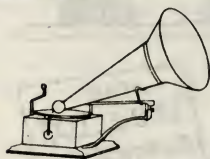


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New Combined

"Twin" Reproducer.

PATENT.

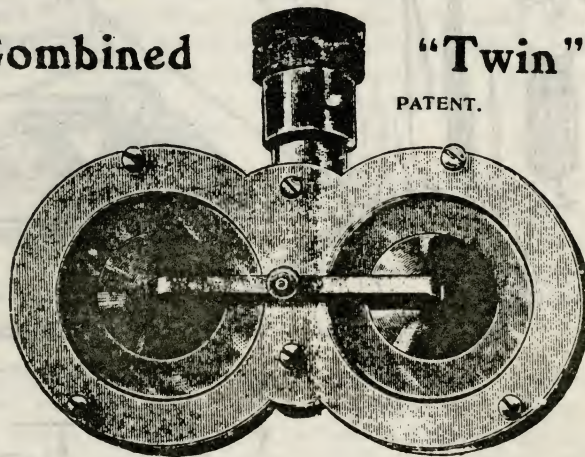
As a further novelty we beg to draw attention to our New Combined Reproducer for all Graphophone styles.

Twice as loud and clear as any Reproducer ever made.

Just give it a trial and it will speak for itself.

Most suitable Diaphragm for LADIES' Voices.

Price, 12s. 6d.



Complete Catalogue of all styles of Musical Boxes free on application.

Our selection of Musical Boxes is acknowledged to be the most varied and up-to-date in England.

SPECIAL NOTICE.—All Repairs to any kind of Musical Boxes and Talking Machines promptly attended to by skilled operators at our London Workshops. Estimates free. For Dealers and the Trade in general, we keep a full assortment of Materials for all Repairs.

This improbable-looking piece of equipment for the Graphophone owner appeared in a Nicole Freres catalogue of the 1903 - 6 period. Other pages from the same catalogue are reproduced in this issue.

MUSIC
DEPARTMENT



I expect it's for these new talking pictures

CRYSTALATE

THE HISTORY OF THE CRYSTALATE COMPANIES IN THE RECORD INDUSTRY,
1901-1937.

The following series was transcribed and edited for Hillandale by Ruth Edge, Archivist at EMI Music Ltd., from the talk given at the June Meeting of the Society by Frank Andrews.

Part 1: ORIGINS.

The Crystalate Manufacturing Company Ltd. was founded in 1901, promoted by a London-based British company and an American partnership at Golden Green, Hadlow, near Tonbridge in Kent. The British promoter had begun as the Endolithic Company Ltd (incorporated in 1882), which had a process of introducing colours and designs into minerals and manufactured substances, and made imitation ivory using the patented formulae of Williams Hands Smith, M. D.

The Endolithic company resolved to wind up its affairs in December 1885. By May 1886, Dr. Smith had been joined by a Mr. Percy Warnford-Davis, and this partnership was carrying on a similar business to that of the liquidating Endolithic Company, the liquidator allowing them to trade under the name of the Endolithic Ivory Company. In August 1889 the Endolithic Ivory Company's business was sold to a new private company, the Endolithic Ivory Company Ltd. In the next year, a novelty arrived from Germany: the doll-makers Kaemer und Reinhardt had been licensed to produce Berliner Gramophones and discs.

In 1895 in America, the American Gramophone and Berliner Gramophone Companies were already in business and, by the end of 1896, Edison, Columbia and the Berliner businesses had all established sole sales agencies. The National Gramophone Company was set up by Frank Seaman, the Berliner Company's agent. It is at this point that the founders of the American business at Golden Green enter the story.

The Burt Company of America was a comparatively new company in 1896; the brothers Burt had been employed at the Albany Billiard Ball Works, New York State, which was founded by Hyatt, the inventor of celluloid. Here they had closely studied all aspects of producing billiard balls, poker chips and similar artefacts and then left to establish their own business.

In 1896 when Frank Seaman became the agent for Berliner products in the USA it became necessary to find a better material for the discs than the vulcanised rubber currently used for pressing. Thus the Duranoid Company of Newark, New Jersey, was contracted to supply shellac composition pressings. In addition, George Henry Burt, with the Burt Company's materials, approached Berliner in 1897 with an offer to press discs after supplying samples. Berliner, having advanced the equivalent

ent of £20, sent his son-in-law Sanders to Burt's factory to see the making of the special hard material used for billiard balls and the like, and to see discs being pressed. On July 7th 1898, Berliner contracted Burt for pressings under Burt's secret formula, which he was not to use for others. Ray Wile in America has turned up correspondence showing that Berliner preferred Burt's product to that of Duranoid.

In October in the USA Columbia moved against Seaman for patent infringement. In November, Deutsche Grammophon GmbH was founded in Hanover. In March 1899 Seaman helped to form a new company which was to make Zonophones, his Berliner agency continuing. In October 1899 supplies between the Berliner Gramophone Company and Seaman were terminated, and the Zonophones therefore needed a new disc.

The Burt formula, then also in use for pressing Berliner discs in Hanover, for which George Henry Burt received a royalty, was supposedly exclusive. However the Burt company of America began pressing some Zonophone records and, later, using Mr. English, the Zonophone recording engineer, began to make its own Climax Records through its new subsidiary The Globe Record Company. The Columbia Phonograph Co. Genl. acted as sales agents for these.

In June 1900 the Endolithic Ivory Co. Ltd. changed its corporate name to that of the Endolithic Manufacturing Co. Ltd. with a registered office in Fore St. E. C. (its workshops were probably elsewhere). Members of the Warnford-Davis family had large interests in Endolithic. The Columbia Phonograph Co. Genl. had been established in London for one month at this time.

FORMATION

This short résumé of that part of the talking machine industry in which George Burt had played a part shows how well experienced he was in the art of making disc records by 1901.

Len Petts pointed out in February 1983 that the Gramophone Company had thought of setting up a pressing plant in England and Burt might well have come over as a consultant. Be that as it may, Burt was here, leaving his Burt Company back in America in a similar business to that of Endolithic, and when with his partner Jacob Kiel he set up as a billiard ball manufacturer under the name of G. H. Burt and Company at Barnes Street, Golden Green, he must soon have been in contact with the Endolithic Company.

On July 10th 1901, G. H. Burt and Company applied for the word Crystalate to be registered as a trade mark with respect to billiard balls, disc records, bottle stoppers, developing trays and similar products. Three weeks later the Crystalate Manufacturing Company Limited was incorporated on August 2nd 1901, although the Crystalate trade-mark was not to be registered to the Company until July 1902.

The G. H. Burt and Company's business had been sold to this new company for



Talking Machines

HAVE come into universal favour owing to the various important improvements made in recording, which have raised the Talking Machine from the expensive and inefficient toy it was only a few years ago to a scientific instrument and made it a favourite with everybody.

Another reason for this great popularity is the versatility of the Talking Machine, as it now faithfully reproduces *any* sound, and is, therefore, a combination of all instruments in existence.

Although it is a mechanical device it has lately been brought to such perfection that it reproduces the human voice, all musical instruments, in fact, any sound recorded by a skilful operator, with all the originality, precision, skill, "dash," or brilliance characteristic of the Artist.

The Record of the future will no doubt be our **NICOLE DISC RECORD**, which is made of indestructible material by an entirely new process. It will stand transmission by rail or post and can be handled without fear of injury, and it is lighter and smoother than any other disc on the market.

NICOLE RECORDS are sold at prices which will bring Disc Machines within the reach of all:

STANDARD SIZE (7in.) 1/- EACH. CONCERT SIZE (10in.) 2/6 EACH.

PLEASE WRITE FOR LATEST LIST.

In Cylinder Records we recommend the improved high-speed, moulded Pathé Record. The artists who have sung for these records include such well-known names as Mr. Ben Davis, Signor Caruso, Mesdames Kirkby Lunn, Ada Reeve, &c., &c.

The new **INTERMEDIATE SIZE** in these Records will have a great future. Their sweetness of tone is unsurpassed.

£9,000. Burt received 7,500 £1 shares fully paid up and Kiel, who became the first company secretary, received 500 shares. In exchange for these shares Crystalate acquired a twenty-one year lease (dating from February 8th 1901) for four acres of land by the River Medway on which stood a factory with plant and outbuildings, offices, the use of a wharf and the use of a tramway in common with others. Also acquired were Burt's secret formulae and processes for the making of Crystalate materials.

The registered office was No.4 The Factory, Golden Green, Hadlow, Kent, and the London office was with the Endolithic Manufacturing Company Ltd. The first directors were Kiel, Burt and Percy Warnford-Davis of Endolithic, the latter having 501 shares. Crystalate was capitalised at £10,000. One of the objectives of the company was to act as sole sales agent for Endolithic. The secret formulae and processes for making Crystalate substances were to be kept in an iron box with two locks requiring different keys. Warner-Davis had one key and Burt the other, and the box was not to be opened without the sanction of Burt as long as he remained the Managing Director of the Company.

Early in 1902 the Burt Company of America sold its Globe Record Company to Eldridge Johnson who, a few weeks later, sold it to the Columbia interests. By this deal he ensured that his new Victor Talking Machine Company would be free of patent litigation from Columbia in the years to come.

The only information discovered which indicates that the Crystalate company made discs soon after its incorporation is in a statement of 1922 from Charles Davis, the works manager, in which he claimed that Crystalate was the first business actually to press gramophone records in England, and another statement by Daryll Warnford Davis, son of Percy, who in 1929 said the first records made by Crystalate were of 5-inches diameter, recorded on one side only, were brown in colour and sold for 2/6d. He also said that at the time they were made (circa 1901/2), only twelve people were employed at the factory. I know of no-one who has ever seen such a disc. I once held the opinion that perhaps Daryll Warnford-Davis' memory had played him false and that he was referring to the former Nicole Records, but the brown Nicoles were 7 inches in diameter at first, and sold for only one shilling, and then not until 1903. True, when the Talking Machine News once listed some Nicoles in 1903 it referred to them as 5-inch discs, but the advertisements gave the size as 7 inches. However there was certainly a connection between Crystalate and the Nicole record, although Joe Batten refers in his book to Neophone records in this context. Possibly these had a connection, but I have never seen any evidence to support Batten's contention.

When Crystalate was founded in August 1901, the disc business lay almost entirely with the Gramophone and Typewriter Ltd. The International Zonophone Company had been founded that May; its first records came from the Berlin presses in August to be on sale in September, augmenting the few Zonophone imports already arriving from the USA.



Nicole Disc Machines



The Nicole Popular.

With Nickel-Plated Horn.



£2 2 0

Price includes 200 Needles, but no Records.

NICOLE STANDARD RECORDS (7in.) 1/-

CONCERT SIZE (10in.) 2/6

A low-priced machine of reliable construction. In light oak case. All exposed metal parts well plated. This machine will play one large or two small records with one winding. Improved CONCERT SOUND BOX. Measurements—Body, 9½in. by 8½in. by 5½in.

Horn, 15½in. by 9½in.

NO BETTER MACHINE CAN BE BOUGHT AT SUCH A LOW PRICE.

Latest List of Nicole Records free on application.

The musical box and talking machine stockists Nicole Freres Ltd., of Ely Place, Hatton Garden, were then mainly owned by Carl Krieger of London and a Herr Brun in Germany. In October 1901 they dropped the Gramophone lines in favour of the new International Zonophone Company's products, which were of both German and American origin. Next, Nicole began operating what they called their 'new record account'. They had entered into a contract with Gianni Bettini in Paris in November 1902 to record and manufacture indestructible disc records, and Bettini ceased all further manufacture of cylinders in order to re-equip his Société des Micro-Phonographes Bettini to record and make galvanos for his own Bettini label, to be pressed at Nicole Freres' works in Ely Place, where the Nicole records were to be 'printed' according to a patent of Carl Krieger's of 1902.

In 1903 Nicole Freres began to establish a separate company, Nicole Records Limited. In this they were assisted by G.H. Burt, Crystalate's Managing Director, who was appointed a Director of Nicole under a special agreement. The Company was incorporated on July 3rd 1903.

Here then is a connection between brown discs and Crystalate, but, as far as is known, Nicoles were recorded and 'printed' at Ely Place and not at Golden Green: yet surely there can be little doubt that Crystalate or Endolithic supplied the ingredient materials for their manufacture? The first artistic director for Nicole Records was Arthur Henry Brookes, who enticed Stephen C. Porter away from the New Century Phonograph Company to become Nicole Record Ltd's first recording expert (although a Mr. Eckhardt of Nicole Freres had taken some of the earlier recordings).

Before the Nicole Record company was formed with Burt's sale of a secret process to the company, Nicole Freres Ltd. had applied for the record label to become a registered trade-mark.

That Burt was associated with Nicole Freres Ltd. in 1903 had not escaped the notice of the Gramophone and Typewriter Ltd, for a letter dated June 1903 was sent to Joseph Berliner saying that his brother had been cabled in America asking for a copy of the 1898 agreement between Emil and Burt, that this had arrived in London and that legal actions had already been instituted against Nicole Freres Ltd's Managing Director, Carl Krieger, and Burt of Crystalate, for breaching the 1898 agreement and for passing off.

A defence was to be that the composition of the Nicoles was quite unlike that which had been supplied to the Berliner Gramophone and Deutsche Grammophon companies under the 1898 agreement. A Mr. Cowen, who had a £1,500 investment in the Nicole business, volunteered information in September 1903 which proved that Nicole were fraudulently copying the composition used for making Gramophone discs. Gramophone and Typewriter took two decisions on this:

1. They would continue the litigation.
2. They would purchase Cowen's partnership in Nicole Freres Ltd, the sales agents for Nicole records.

Many 10-inch discs were pressed in black, shellac-like compositions from Nicole matrices and were so for another ten years or so. Some may well have been pressed as early as 1904, but whether any 7-inch records were pressed in the autumn of 1903 in a likeness to the 7-inch Gramophone Record remains in doubt, in spite of Cowen's information.

While litigation proceeded against Nicole, John Watson Hawd (known as Jack) returned from India in October 1903, where he organised G and T's Far Eastern recording expedition for Gaisberg, Addis and Dillnutt, a task which, as Len Petts has recounted, had made Hawd very dissatisfied with the treatment he had received from his head office in London. Upon his return he resigned from the company and, by March 1904, had acquired enough stockholding from the Nicole Record Company Ltd. to qualify as one of its directors. (He and Burt were earlier acquainted, of course). With Hawd a director, a Nicole Indian recording expedition was soon organised.

Litigation took such a long time to progress to a court hearing that G and T took the decision to buy up the Nicole Record Company Ltd. for the sum of £25,000, but this scheme fell through when they discovered how many individual and complicated agreements the company had. G and T then decided to drive Nicole out of business by underselling them, and in 1904 they produced the 5-inch Zonophone record, to sell in those countries where the Nicole was taking a hold. The price was only 9d., compared with 1/- for the Nicoles.

At this time, Ullman Freres, the London Zonophone agents until December 31 1903, began selling the new Odeon 10 $\frac{3}{4}$ -inch records in Britain in February 1904. (They had a large financial interest in Prescott's International Talking Machine Company m. b. H. of Berlin, which he had founded in the autumn of 1903). Shortly after this, the Michaelis brothers, Alfred and Dr. William, directors of the Gramophone Company (Italy) Ltd., parted from the company. Alfred, with a partner, set up the Societa Italiano di Fonotipia in Milan, with the express purpose of ruining the Gramophone business there as he too was dissatisfied with Head Office in London (and they with him), and Dr. William began his Neophone Disc Phonograph business in Germany, whence he soon moved it to Maiden Lane in London. Crystalate may have supplied the white enamel compound which formed the surface of the Neophone discs, as Batten says, but I cannot confirm this.

Did the 5-inch Zonophone kill the Nicole trade? Well, the 5-inchers do not turn up as frequently as the Nicoles but, in any event, the Nicole Record Company Ltd ceased doing business in England at the end of March 1906. The manufacturing plant and matrices were carted away by director Jack Hawd to Wellington Mills, Stockport, Cheshire, where Hawd found a partner in a Mr. Spicer, forming Hawd and Spicer Ltd. Burt of Crystalate was Works Manager. From there, fresh pressings of 10-inch Nicoles could be had, or later in new black materials, as Britannic, The Leader, Conqueror, Sovereign Record, Universal Records, and others.

(to be continued)



Nicole Disc Machines



Corona No. 3.

With Nickel-Plated Brass Horn.



£8 8 0

Price includes 200 Needles, but no Records.

NICOLE STANDARD RECORDS (7in.) 1/- CONCERT SIZE (10in.) 2/6

CORONA No. 3 is fitted with a nickel-plated brass horn; a finely polished black cabinet with nickel-plated ornamental ledges, and top plate. The combination of the black case and nickel-plated accessories give a unique and elegant effect.

Measurements—Body, 13½in. by 12½in. by 8in.

Horn, 24in. by 13½in.

Latest List of Nicole Records free on application.

At the end of an earlier article on the dating of Victor recordings (Hillandale 116), I commented on the complexity of the Columbia matrix system, which seemed to me to be impenetrable. This elicited a response from an American reader, who sympathised with me and referred me to articles he had written in Record Research magazine on the Columbia system.

I have not yet read this account, but I have, nevertheless, attempted to reconstruct the Columbia matrix systems and their datings in the acoustic period in an effort to date records in my collection. It quickly became apparent that the number of matrix systems was enormous, and the system was every bit as complicated as in the early days of the Gramophone Company.

For this article, therefore, I largely confine my attention to the records issued by the English Columbia organisation, accepting that many of their issues were recorded in foreign parts, particularly before 1909. I present my reconstruction as a cock shy, hoping that subsequent correspondence may clarify the situation.

The English off-shoot of the Columbia Phonograph Co. Genl. of the U.S.A. was formed in 1903. Until 1909, its recording policy was not adventurous, and many of the records sold in England were from American masters - this particularly pertains to classical vocal issues. At first, many titles appeared on both cylinder and disc, but these have separate matrix numbers. In the early days, the matrix numbers and catalogue numbers were the same; later, they were different, and to add further to the confusion, many discs were issued at various times with several catalogue numbers - and many of these look like matrix numbers! However, the matrix number is generally the only pure number (that is, without suffix or prefix letters) on the label. (An exception occurs in the 1920s, when the prefix A (10-inch) and AX (12-inch) matrix systems come in - these numbers appeared outside the label). It is probably fair to say that the matrix number can generally be recognised!

In order to date a recording, graphs of matrix numbers versus date of use are needed, and I have attempted to set these up by use of the standard discographies. Data were obtained from the Record Collector, Brian Rust's The Complete Entertainment Discography, CLPGS reprints of Columbia 1904/5 and 1914 English catalogues, Bauer's Historical Records, Moses' Collector's Guide to American Recordings 1895-1925 and Gellatt's book.

Immediately one comes up against a problem - precise recording dates are rarely found for Columbia recordings, particularly in the early days. A typical entry in a discography will be 'c. May 1906'. Why is this so? Are the original recording books no longer available? One gets the impression that many of the 'dates' in discographies are guesses, presumably based on very limited original information used for calibration purposes. My calibration graphs, therefore, will be only as good as the

discographical data. I hope, however, that the general picture that emerges will be about right - and so we press on.

I shall concentrate on the London-recorded matrices, but many foreign recordings were also sold in the U.K. and I shall finish up with a partial summary of these.

10-inch series

Number	Dates
1-5000? (1)	1902 - end 1910?
25000-26999 (1)	1903? - early 1911?
27000-28999	early 1911? - summer 1914?
29000-29999	summer 1914? - summer 1915?
65000-65999	Sept. 1915? - 1917?
69000-69999	1917? - 1919?
71000-71999	end 1920? - Oct 1922
73000-735000	Nov 1922 - May 1923
A1 - A2500	May 1923 - Sept 1925
(3) WA2501 -	Sept 1925 -

12-inch series

30000-30999	1906 - March 1912
6000-6999	1908 - 1916?
35800?-35999	Aug 1915?- Dec 1915?
75000-76999	late 1916? - March 1920
74000 - ?	April 1920 - ?
AX1-AX1100	April 1923 - June 1925
(3) WAX1101	June 1925 -

Notes:

1. For first two ten-inch series, both 7-inch and 10-inch discs occur in the same matrix series (which were also catalogue numbers) and the same catalogue numbers cover both 7-inch and 10-inch issues of the same piece. Were the masters both recorded at the same time, the 10-inch versions giving the better sound?
2. Questioned dates are conjectural
3. The WA and WAX series were electrically recorded, and followed on directly from the A and AX series. Some of the previous series seem arbitrarily split from each other, but there are often discontinuities between the calibration graphs for the individual series.

Comments on the 10-inch series:

1-5000 Series

These were 7-inch and 10-inch recordings imported from the USA, which appears to have been a major source of recordings for the English Columbia company in the early days. It included the short-lived 'Grand Opera' series, started in 1903 (?)



Nicole Disc Machines



Nicole Drawing-Room Model

With Solid Brass Horn. English-made Case.



£3 17 6

Price includes 200 Needles, but no Records.

NICOLE STANDARD RECORDS (7in.) 1/- CONCERT SIZE (10in.) 2/6

This model will suit those who require a medium-sized machine of the best finish. Fitted with CONCERT MOTOR to run one large or two small records with one winding. Latest type of CONCERT SOUND BOX. 9in. turntable. 15in. solid brass horn. The brass horn is a great improvement, especially with band records. All metal parts are highly nickel-plated.

Measurements—Body, 11in. by 10½in. by 5in.
Horn, 15in. by 10in.

Latest List of Nicole Records free on application.

and running to 32 issued discs. By 1905, these were no longer on sale in the States, but all 32, plus four more, were in the English catalogue. Were the four by the tenor Roberto Vanni not included in the American issue? (The 32 were split among Sembrich (3), Edouard de Reszke (3), Schumann-Heink (5), Campanari (5), Suzanne Adams (7), Scotti (3) and Gilibert (6, including a duet with his wife, the Belgian soprano Gabrielle Lajeune). However, the whole issue included popular pieces also. The earliest number I have seen is 647 (circa Feb 1902), and the latest is 4941 (Sep 1910); was the series drawing to a close by then?

The calibration graph is a bit odd. There is a roughly linear bit between 647 (circa Feb 1902) and 1857 (Sep 1904). Then there is a gap and a jump to 3277 (circa Sep 1905) (same artist as 1857), followed by a linear portion to 3934 (circa Feb 1908), another gap, and a more steeply rising portion from 3988 (circa May 1909) to 4941 (fifth take, late Sep 1910). I regard these data as only approximately placed in time, and I suspect that the middle group (3277 to 3934) should be moved later in time by 12 months. The whole graph would then look reasonably continuous, and linear with time.

25000 - 26999 Series

This series seems to form a continuous run, and was mainly devoted to English popular or semi-popular material. Some at least of the issue was imported into the USA using the same matrix (catalogue) numbers. The earliest dated number I have seen is 25627 (June 1904), and the latest is 26644 (circa Aug 1909). In fact, these are the only two numbers with dates defined even as closely as one month, and the possible dates for several other numbers I have seen can be as wide as one year. Within these very drastic limitations, the graph is a reasonable straight line, from zero at start 1903 to 26999 at start 1911.

27000 - 28999 series

Again, this seemed to be mainly popular material, and the chronology is very poorly defined. Thus both 27171 and 28486 (the latest number I have seen) are dated as 1914/15. My only justification for starting the series in 1911 is that this is where the almost equally shadowy 25000 - 26999 series apparently finishes.

29000 series

Another shadowy series, with 29219 (Nov 1914) and 29949 (circa July 1915). The latter gives the estimated completion date of Summer 1915.

65000 series

The only number I have seen in this series is 659333, which I date as 1917, since my copy of the Butt record has handwritten inscription dated 1917 on the label!

69000 series

This is another series I have not come across in the discographies. Moses remarks that Butt's 69999 (an interesting number!) was imported to the States in 1921-25. I have guessed that the series ran from 1917 to 1919 to fill in a gap.

71000 Series

We get on to slightly firmer ground with this series. The earliest dated number I have seen is 71467 (circa Nov. 1921) and the latest is 71993 (Oct 1922), but there is only one point in between

73000 - 73500? Series

This contains considerably more data than the previous series, and seems to follow on graphically from the earlier series, giving a reasonable straight line between 71467 (circa Nov 1921) through 71993 (Oct 22), 73002 (Nov. 1922) to 73424 (May 1923). The latter number seems near the end of the series, since the following series then took over.

A Series

This seems to have started in May 1923 and ran until the start of electrical recording (on 10-inch discs) in October 1925, with the WA series which follows on directly. The earliest A number seen is A33 (circa June 1923) and WA 2501 is dated 10 October 1925, a rare defined date. The A series is a very good straight line from May 1923 at zero to end September 1925 at 2500.

Comments on the 12-inch series.

30000 Series

This included classical and semi-classical material. The soprano Ruth Vincent used numbers 30001 and 2, while the baritone Taurino Parvis used 30000, showing that this series at least did not start at 30001. Again it originated in the USA (was it used exclusively there? Did Vincent ever go to the States?) The earliest dated number is 30038 (Sept. 29 1906) and the latest is 30998 (Mar 25 1912). After the 1906 number, we get 30144 (Nordica, May 23 1907) and then there is a gap until 30328 (mid Jan 1910), one or two points near this, and 30504 (late May 1910), 30555 (circa mid-Aug 1910). Then there is a gap until spring 1912, with 30971 (March 29 1912) and 30998, both by Destinn (with four others by her.)

6000 Series

The only evidence I have for this series starting in 1908 is that Vincent recorded 6003 (and some others) that year, according to Moses. Further data are limited, the latest dated number being 6506 (circa June 1915) and with 6462 (late March 1915) and 6475 (early April 1915).

Series 35800? - 35999?

The only numbers I have come across in this series are 35886 and 7 (Beatrice Lillie, circa November 1915). I guess that it was a short-lived series, perhaps filling a gap between the end of the 6000 series (which might have ended in summer 1915 at, say, 6600) and late 1916/early 1917, when the 75000 series might have started. It should be noted that the 35000 series proper was allocated to recording operations in Eastern Europe in Edwardian times. The Lillie numbers might be a misprint in Rust's compilation - but what for?

75000 - 76999 Series

A bit more solid ground here. The earliest dated number is 75367 (circa Feb. 1907) and the latest is 76681 (Oct. 1919). The graph is reasonably linear (except for a group of numbers around 75922, dated May 1917, which would look better about January 1918 - the same artist recorded a group around 76164 in June 1918).

74000 Series

This seems to follow on directly from the above, although only two groups of numbers (74053,4,5, circa April 1920, and 74071,2,3, circa April 1920) have been come across.

AX1 - AX1100 Series

This started in April 1923 and carried on until June 1925, when electrical recording started with WAX 1101 (or thereabouts). The earliest dated number is AX100 (July 23 1923) and the latest AX 982 (April 25). I have not come across reference to any (English) Columbia 12-inch recordings between the end of April 1920 and the start of the AX series in late spring 1923. Were there any?

Foreign series issued in the U.K.

I stated at the beginning of this article that a number of foreign-made recordings were issued in the U.K., notably the early 0-5000 (10-inch) and 30000 (12-inch) series, originating in the States. The other major American series in the acoustic period may also have been imported (?), particularly the classical ones, I would guess. The American series for which I have a reasonable amount of data, apart from those already mentioned, are as follows:

10-inch

19000 - 20000	1910 - mid 1912
38000 - 40000	mid 1912 - late 1915?
43000 - 45000	late 1915? - 1917?
46000 - 48000	late 1915? - 1917
5,800 -	1916?
77000 - 82000	early 1917? - late 1924?
140000 -	late 1924 - electric period.
64000	1923?

12-inch

36000 - 38000	1911? - 1916
48500	1916?
49000 - 50000	1918? - late 1921
5600 -	1919?
59000 -	1916? - 1918?
84000	1918?
85000	1918?
83000	1923?

I suspect that this list is very incomplete and most of the dates are rather approximate.

Non-American foreign series

From Bauer, one can construct the following for the period to 1909.

10000	Milan
12000	Vienna
22000	Madrid
35000	Russia
40000	Vienna - Germany
41000	Scandinavia

In 1904/5, the Russian 35000 and Italian 10000 opera records were in the English catalogue. In the 1914 Celebrity catalogue, we find the US 36000 series, many of the Nordicas from 1907 to 1911 and other 30000 operatics by Destinn, Bronskaya and others. There were a number of Italian operatic records available, but by this time the catalogue numbers were different from the matrix numbers, so the matrices cannot be defined.

I am very conscious of the incomplete and fragmentary nature of this reconstruction of the Columbia acoustic matrix system, and would welcome constructive criticism and amplification.

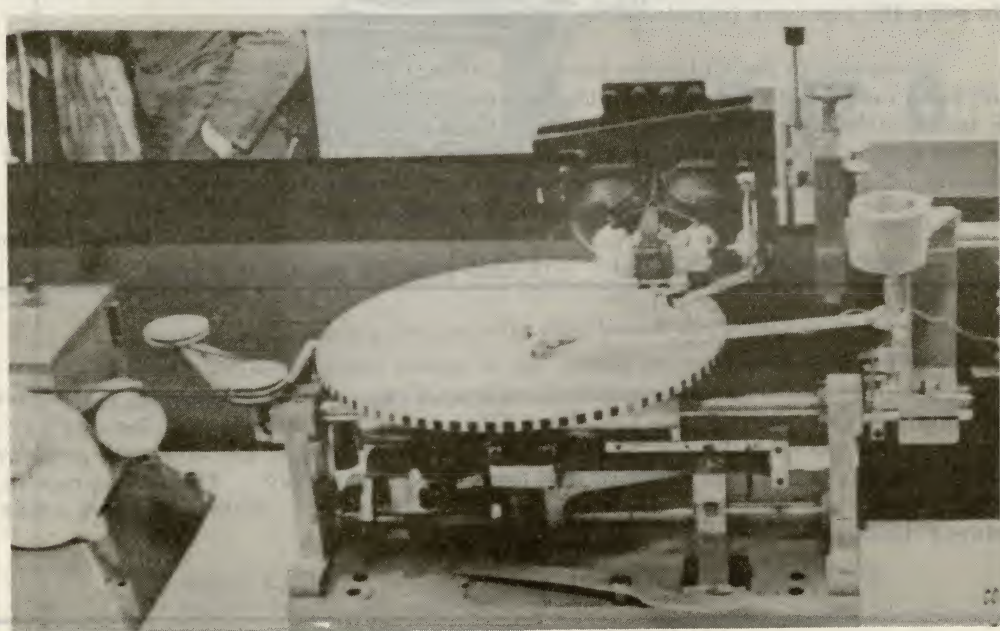
THOSE FREQUENCIES AGAIN.....

A few points that may be of interest:

First of all, my own bloomer on the wavelength issue (Hill andale April 1983) - this is of course shorter because of the lower velocity at the reduced speed towards the centre of the record. Thank you Mr. Loughland. As soon as I locate a source of supply, I am going to place an order for a Charles Babbage's calculating engine. I hope Mr. Loughland will not get his fingers jammed in his own machine

We do seem to be a rather curious collection of people - now Mike Field is using a lot of energy and some very expensive laboratory instruments taking "A" weighted curves of a mechanical amplifier. These machines were I believe at one time available as a wireless amplifier, using a flat glass disc instead of a cylinder: the 'primary' stage was activated by a small electro-mechanical transducer on the lines of a single headphone earpiece. I have never heard of a phonograph operating on this principle. One lives and learns.

With regard to the variable pitch groove spacing (Peter Adamson, June 1983), I think the answer here is that the recording engineer had a number of leadscrew speeds to choose from even on the earlier gravity-driven machines. Engineers in those days had to be able to read a musical score so as to be able to adjust the speed at the right time - unlike the so-called engineers of today where everything is automated. God only knows what happened during the recording of a live performance using a vehicle outside and a man in the concert hall to give guidance over the telephone. The highly-automated recording lathes of today have continuously variable



pitch adjustment using a servo motor driven first by an 'advance' reproducing head on the tape machine (the recording is taped and edited first - sometimes after many 'takes'), and now by a digital delay line. It is interesting to note that a patent was taken out only a few years ago by one of the film studios to drive a recording galvanometer. In a modern disc-cutting room there is even a closed circuit television screen to give a highly magnified image of the grooves during recording. The 'wax' is a blank made of aluminium coated with cellulose nitrate, and the swarf is highly inflammable. The blank is known for some reason as an 'acetate'. In the illustrations are two early recording lathes, both built in the old acoustic recording days and later adapted for use with an electro-mechanical cutting head.

One of the cutting heads is almost certainly the famous Western Electric head using torsional damping through the length of the arm. The amplifiers used to drive these would produce only about 12 - 14 watts. Nowadays well over 100 watts is used to cut a record, the amplifiers being of the order of 2-300 watts, to take care of the transients.

One of the early machines illustrated has been designed so that the turntable moves under the recording head - no doubt so that the recording horn could remain stationary. The turntable (in fact the whole mechanism) was driven by a weight of about 110 - 150 lbs. dropping about 12 feet - rather like the counterbalance backstage or for the car of a lift. Sometimes the gears would be cut and then sliced into four or six slices and re-assembled at 90 or 60 degrees, thus multiplying the flutter frequency and making it easier to damp out. Gravity driven machines were used until the 1950s when the l.p. was introduced.

Reverting to the Columbia tone-arm advertisement (February 1983), it has occurred to me that the term 'straight line amplification' may have been borrowed from technical articles of the period when all wireless owners were experts and built their own sets. It refers to characteristics curves of a thermionic valve when used to amplify l.f. signals. It might have looked very impressive at the time.

Denis Harbour.

We hear from Ronald Dethlefsen [REDACTED] Bakersfield, California 93306) that stocks of his Volume 1 of The Edison Blue Amberol Records are low and that there will be no reprint. Members wishing to get this well-produced reference work are urged to write to Ron Dethlefsen right away. The U.S. price is \$28.95. There are still fair supplies of Volume 2 in stock. Neither of these books is offered through the Society's book-list.



Nicole Disc Machines



The Nicole Colonial

With Nickel-Plated Horn.



£2 12 6

Price includes 200 Needles, but no Records.

NICOLE STANDARD RECORDS (7in.) 1/- CONCERT SIZE (10in.) 2/6

We have named this machine the NICOLE COLONIAL because it is specially suited for export to the Colonies. This compact little machine is very strongly made, all metal parts including the motor are nickel-plated. Oak case. Superior CONCERT SOUND BOX.

Measurements—Body, 9½in. by 9½in. by 5in.

Horn, 15in. by 10in.

Latest List of Nicole Records free on application.



Nicole Disc Machines



Corona No. 2.

With Black Metal Horn.
Nickel-Plated Brass Bell.



£6 6 0

Price includes 200 Needles, but no Records.

NICOLE STANDARD RECORDS (7in.) 1/- CONCERT SIZE (10in.) 2/6

In highly finished solid oak case with carved base. 10in. turntable, and latest improved CONCERT SOUND BOX. All exposed metal parts are well plated.

Measurements—Body, 13½in. by 12½in. by 7½in.

Horn, 24in by 13½in.

Latest List of Nicole Records free on application.

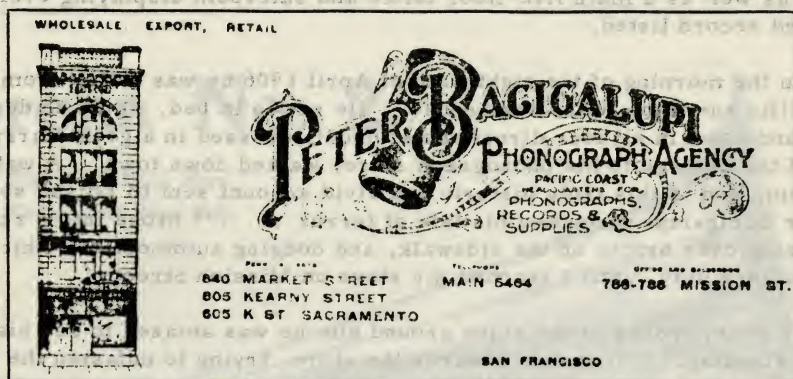
Further to Francis Traynor's fascinating 'Earthquake Anecdotes' in Hillendale No. 133, Edison's main dealer in San Francisco at the time of the 1906 earthquake was 51-year old Peter Bacigalupi, and Italian who had settled in San Francisco and had become an Edison dealer by 1898. At the time of the disaster he had expanded his business to such an extent that he had no fewer than three penny arcades running in the city as well as a main five-floor office and saleroom displaying every Edison machine and record listed.

On the morning of the eighteenth of April 1906 he was woken from his sleep by the terrific rumbling of the earthquake. He sat up in bed, which he described as 'Going up and down in all four directions at once', dressed in a great hurry, and with thoughts of the damage to his phonograph store, walked down town. A wall of flames followed him, and in this truly historic and vivid account sent to Edison some time later Peter Bacigalupi recounted his tale of terror. . . . "I broke into a run, and continued running over bricks on the sidewalk, and dodging automobiles, which were doing ambulance duty, until I reached my store on Mission Street."

As Peter looked at the ruins around him he was amazed to see his phonograph store still standing. . . . "I rushed towards the store, trying to unfasten the door, but the lock was so hot that in trying to unfasten it I scorched my fingers. I noticed that the plate glass window was in splinters, so I climbed through this into the store. I packed all our account books in a large basket, then took a trip through the whole store for one last look. On the second floor every phonograph record was still standing in its shelf in perfect order, just as though there had been no earthquake at all. I soon saw how hopeless was my chance of saving the building from the fire. It was now consuming the buildings on either side, and as I stood there I saw the flames break through the roof and attack the store walls. When I turned around to go down the fire escape at the back of the building I saw that the fire was also coming in a sheet of flames on the opposite side of the alley; the fire was by then so hot that I decided it was better to get away. We took the basket containing the books and papers to our Market Street arcade, which we did not think for a moment was in any danger." As he went with his basket of books Peter observed great stacks of clothing and goods which had been taken from burning stores by crazed owners, and wounded and dead everywhere. The fire moved on, never stopping until it reached him in Market Street where he was ordered out of his phonograph arcade by the Military and everything was destroyed. Peter then went home to his wife and children, walking through the rubble and terror in the streets. . . . "I knew they were worried about me, and frightened of more earthquakes. I could not stay very long, being restless, and I went around town watching the city burn to the ground. For two nights the fire ate its way gradually towards my home, it finally stopped within six blocks of my residence."

A dramatic and historic story indeed from Edison's San Francisco dealer, who declared in the San Francisco press some weeks later that "Regardless of all these ordeals I am going to stick in 'Frisco, the ruler of the Universe having spared the lives of my wife and children."

Peter Bacigalupi took his sons into his business, and with help from Edison and others the firm re-opened with a new stock of machines and cylinders just two months after the earthquake, as Peter Bacigalupi and Sons at 1113 Fillmore Street. Perhaps the man in the nightshirt observed among the earthquake ruins with a phonograph under his arm in Francis Traynor's article was none other than Peter Bacigalupi!



Peter Bacigalupi's pre-earthquake letterhead

A 10-INCH BERLINER

James Dowdeswell

"While browsing through some records in my collection recently I remembered a telephone call from a good friend of mine a couple of years ago. It went something like "Hey Dow, guess what, I've found a load of records with funny coloured labels called Fonotopia or something. Trouble is I stepped on five of them and had to pay this bloke 10p each for them anyway, but I've still got the others."

Well, among 'the others' there was one particularly interesting item which has subsequently found its way into my collection as a present. It is a 10-inch Berliner disc. The substrate is black and is of similar material to the standard 7 inch discs. All the information is embossed in raised letters, and 'Reproduced in Hanover' appears on the reverse. The record is approximately double the thickness of a 7-inch one. It plays extremely well using a bamboo needle.

With reference to Brian Rust's listing of Berliner records (Talking Machine Review Autumn 1981), the GC 7942 number seems to fall nicely into the 7900 number range reserved for violin solos, dating this record at circa October 1898. Presumably this is a transitional disc, and it would be interesting to know of any similar examples.

(Cue for a comment from Peter Adamson, perhaps. I imagine the label style indicates a much later pressing date than 1898 - Ed.)

Dear Christopher,

Just in case readers have looked through all their copies of 'Hear My Prayer' on C1329, I had better point out an omission from the list of numbers in my letter which appeared in the June issue.

The second line of the appropriate paragraph should read "... combinations of CR 1020 with III, IIIA, VIA, III T1 and IIIT1; and CR1021 with III, IIIA, VIIIA, III T1 and III T I..."

And of course I wouldn't suggest that Zabel is "almost certainly unknown to all records collectors", but "Virtually all record collectors".

Peter G Adamson

Tom Halle writes from Norway with a problem concerning a cabinet Grafonola which he has been given. A photograph appears on Page 266; but it has no works, and the legs have been shortened. Can any member help with information on the correct motor, tone-arm etc. to look for? Editorial knowledge of Columbia machines prior to 1926 or so is patchy, and I cannot even pinpoint the date of this one. Also needed is information on the correct size and shape of the legs, so that they can be restored correctly. Any comments please to Tom Halle at [REDACTED] Oslo 10, Norway



**E. BERLINER'S
GRAMOPHONE**

Covered by English and
Continental Patents.

English

Violin



CHOPIN'S NOCTURNE

played by

Mr. G. Jacobs

London

G.C.-7942

REPRODUCED IN HANOVER

Label design of James Dowdeswell's

10-inch Berliner described on the
previous page.



Nicole Disc Machines



Corona No. I.

With Black Metal Horn.
Nickel-Plated Brass Bell.



£4 4 0

Prices include 200 Needles, but no Records.

NICOLE STANDARD RECORDS (7in.) 1/- CONCERT SIZE (10in.) 2/6

Richly ornamented oak case, and 24in. horn. 10in. turntable and latest CONCERT SOUND Box.
This machine plays two large or three small records with one winding.

Measurements—Body, 12½in. by 11½in. by 7in.

Horn, 24in. by 13½in.

Latest List of Nicole Records free on application.

BOOK REVIEW

HIS MASTER'S VOICE Instrument Catalogue 1930

Obtainable from

Price £2 40
post paid

At a time when much of the world was in slump, the 1930 H. M. V. gramophone catalogue showed many expensive and elegant models; in fact, this was a period of jumbo-sized instruments for a moneyed clientele. This catalogue, now reprinted by the Society in monochrome, shows the electrical reproducers (at up to £250 or so) and the enclosed Exponential Horn models (equivalent to the Orthophones in the United States). The Automatic Model 1 was the largest of the giants, with the 203, 193 and 163 not far behind. For the less opulent a few table grands with the No 4 soundbox still survived, from £6 upwards, as did the last H. M. V. horn model, No. 32 from 1928, at £8.10 in oak; nowadays it can command considerably more than most of its originally more expensive stablemates. This was the last year before the H. M. V. radiograms came on the market.

There is a short article on the No. 5a soundbox explaining "matched impedance." For those, such as the writer, who never understood this, it was a way of comparing the mechanical characteristics of the acoustical soundbox with the electric pick-up -- really a sales ploy. Several pages of accessories are offered, all now collectible apart from record albums and cases, easily available knick-knacks today that have never become popular among enthusiasts.

The illustrations in this booklet have reproduced with unusual clarity and it is good value.

George Frow

Dear Mr. Proudfoot,

I should like, through your columns, to seek information on the Vitaphone short sound-on-disc films, made in 1926/7. I should like answers to the following questions:

- 1) How many Vitaphone shorts were made?
- 2) And released?
- 3) The release dates
- 4) The titles, artists and release dates for those with classical musicians, such as Martinelli.
- 5) Where can I find a list of the titles of all the shorts?

I imagine that the answers to the above will be well known to some transatlantic readers. Many thanks.

George Taylor

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